DOCUMENT RESUME

ED 274 954 CS 008 562

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TITLE Improving Lectures: Challenge Both Sides of the Brain.
PUB DATE Jun 86
NOTE 14p.; Paper presented at the National Conference of the Association of Optometric Contact Lens Educators (Forest Grove, OR, June 13-14, 1986).
PUB TYPE Viewpoints (120) -- Speeches/Conference Papers (150)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS Advance Organizers; *Brain Hemisphere Functions; *Cognitive Mapping; Higher Education; *Lecture Method; *Notetaking; Outlining (Discourse); *Study Skills; *Teaching Methods
IDENTIFIERS Semantic Mapping

ABSTRACT

Professors need to stimulate both sides of students' brain to allow for efficient increase of information absorption. As an alternative to linear outlines, mind maps can provide for more effective comprehension as related ideas are conceptualized from the center out to supporting details, as well as from top to bottom or left to right. The mind map, an organizational skill that helps students to better understand a concept or an objective, can be used to introduce a total course, give a skeletal or course overview, or structure an entire lecture. Mind maps have four major advantages: (1) they aid professors or lecturers, (2) their open-ended quality allows students to brainstorm, (3) they help clarify student notes and liberate students to think , and (4) they increase comprehension. Mind maps also set up a clear hierarchical and graphic structure that allows for easy recall of related ideas. The construction of maps is very open-ended, depending on determination of main objectives, lay-out of information, and personal creativity to aid review and recall. "Mind maps," "webs," "semantic maps," etc., are new terms, and although they are not a panacea, they present an innovative and creative approach for organizing information and challenging the right side of the brain. (Figures illustrating the text are appended.) (JK)

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IMPROVING LECTURES:

CHALLENGE BOTH SIDES OF THE BRAIN

Anita McClain

Introduction

As more research is generated regarding the use of both sides of the brain[1] it is becoming apparent that as professors we need to stimulate students. To meet all the students' needs we must consider teaching to the right brain as much as we do the left brain. Over the years left brain teaching techniques have dominated the variety of strategies being implemented in classrooms. For example, professors lecture from linear outlines and students take notes in a linear fashion. However, the brain is very capable of absorbing information which is non-linear. Right brain oriented students continue to doodle and draw pictures in their notes. They also relate new concepts to pre-learned information by use of illustrations and by the use of mnemonic devices. For the brain to absorb information more efficiently, research is suggesting that we stimulate both sides of the brain. Instead of always lecturing from linear outlines, use mind maps (Figure 1). Give students skeletal overviews of mind maps to fill in as they listen to a lecture (Figure 2). More effective comprehension will occur if related ideas are conceptualized from the center out to supporting details as well as from top to bottom or left to right. After all, the brain does not retrieve information in just a linear direction.

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Definition of Mind Maps

A mind map is an organizational skill which helps students to better comprehend a concept or an objective. A mind map can introduce a total course (Figure 3) and each facet might lead to further developed maps for ensuing lectures (Figure 4). Other organizational skills more familiar to most are the outline and/or the flow chart. The outline is totally linear and the flow chart is very sequential. The mind map introduces the concept that the center contains the most important point and as one moves out from the center supporting details relate to the center and to one another. However, mind maps can also use flow chart techniques such as the use of arrows and/or outline techniques such as lists (Figure 1). Besides the term, "mind maps," there are many synonomous words available for this organizational skill. The literature refers to this skill as semantic maps, webbing, mapping overviews, structured overviews, and networks to name a few.[2,3,4]

Advantages of Mind Maps

At Pacific University in the School of Optometry several contact lens professors met to help design mind maps for particular courses and subsequent lectures (Figures 3,4). As a result, a review of the curriculum surfaced which caused them to realize that a key concept might be lacking in a specific course or there might be too much overlap between several courses just by scrutinizing the general overview, mind map, or "total picture" of a course. This would have been more difficult to discover had they studied linear outlines of courses, instead. More obvious advantages of mind maps (Figure 1) resulting from a total picture

overview are: 1) Professors or lecturers are more likely to stay on task, if they fill in the map as they lecture. 2) Because mind maps are open-ended, students can brainstorm and add their personal concepts, ideas, or reactions as the topic is presented. 3) If skeletal maps (Figure 2) are provided, students can clarify notes and record only pertinent information thus allowing them to think during the lecture rather than merely write words. 4) Because of previously stated reasons, comprehension should be more effective and efficient. Also, the webbing of concepts allows for a better understanding of the relationships of ideas presented. Other advantages might be the following: 1) The main idea is clear as it is central to the map. 2) More important supporting concepts radiate out to lesser important points. 3) Study techniques of review and recall are more effective when analyzing a total map of related ideas. Picture, symbols, color, etc. encourage better recall. As intended from the open-ended nature or the map, the reader of this article could probably generate more advantages than those presented herein.

Construction of Mind Maps

The construction of maps is very open-ended. How creative a person is determines their creative use of symbols, color, the use of computers, and pictures, to name a few (Figure 1). First, one must determine the main objectives, key concepts and supporting information. Next, one must design a lay-out or skeleton for the information, remembering to leave open spaces for student input (Figure 2). Lastly, one can add the creative touches or mnemonic devices which aid review and recall.

Dr. Don West, O.D.[5] "scratched out" a map from his linear notes. The author of this article, with the help of secretarial staff, developed

a skeleton (Figure 2), and used a computer to finish the overview of edema (Figure 3). If a professor wishes, the skeleton can be distributed in class for "notetaking." This would encourage a variety of the points made in the section covering advantages of mind maps.

Summary

Mind maps, webs, semantic maps, overviews, etc. are fairly new terms in the literature which encompass a creative way to organize information. They can be used as overlays on the overhead projector for lectures, skeletons for notetaking or pictures which enhance recall and retention. Because of comparisons, contrasts, relationships, etc. which are illustrated they also elicit critical and analytical thinking and thus more effective and efficient comprehension. Mind maps are not a panacea, only a new approach to use with outlining, flow charts and other skills. Lastly, this organizational skill challenges the right side of the brain, a neglected human resourse.

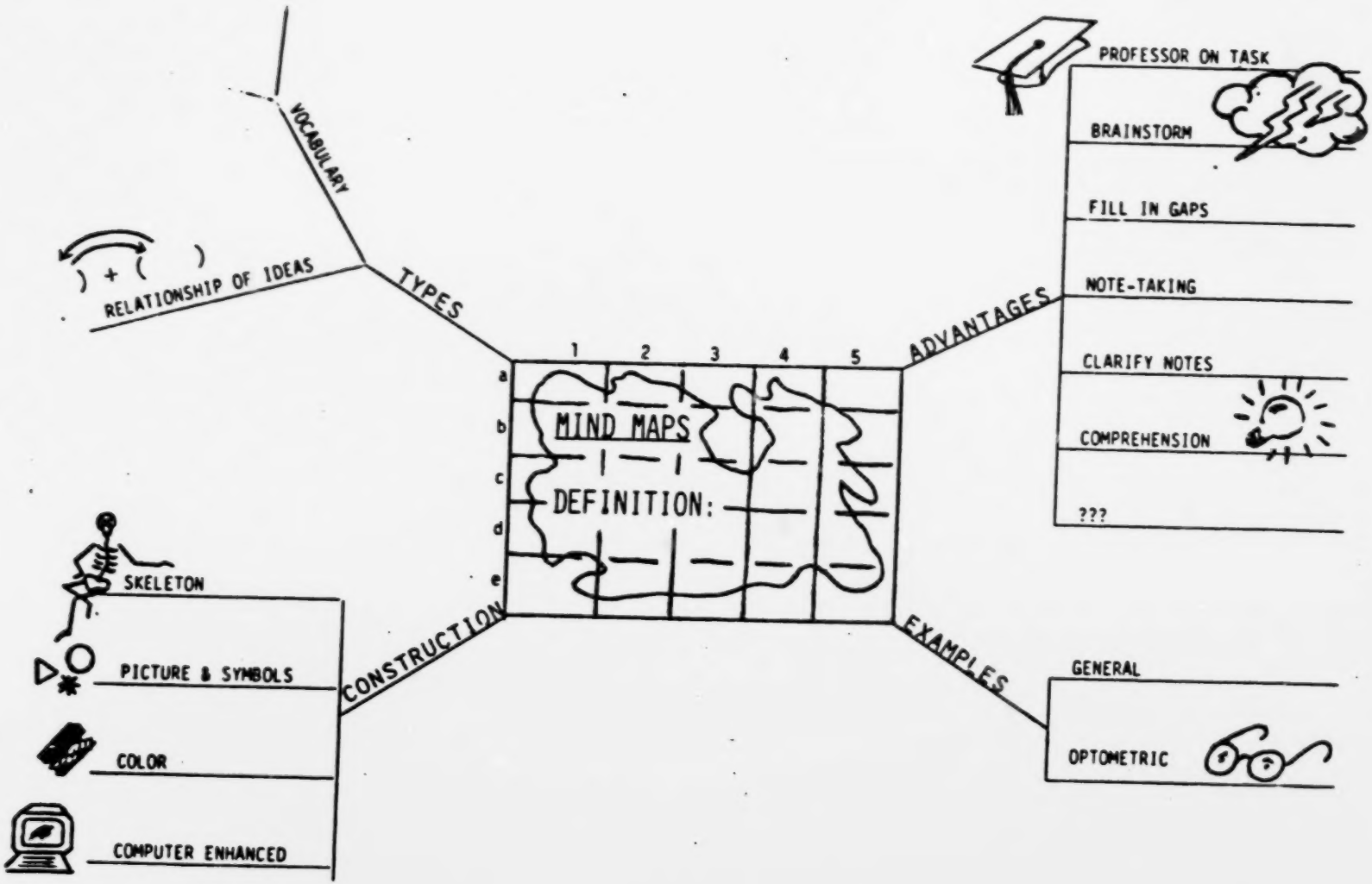

FIGURE 1

Components of a Mind Map

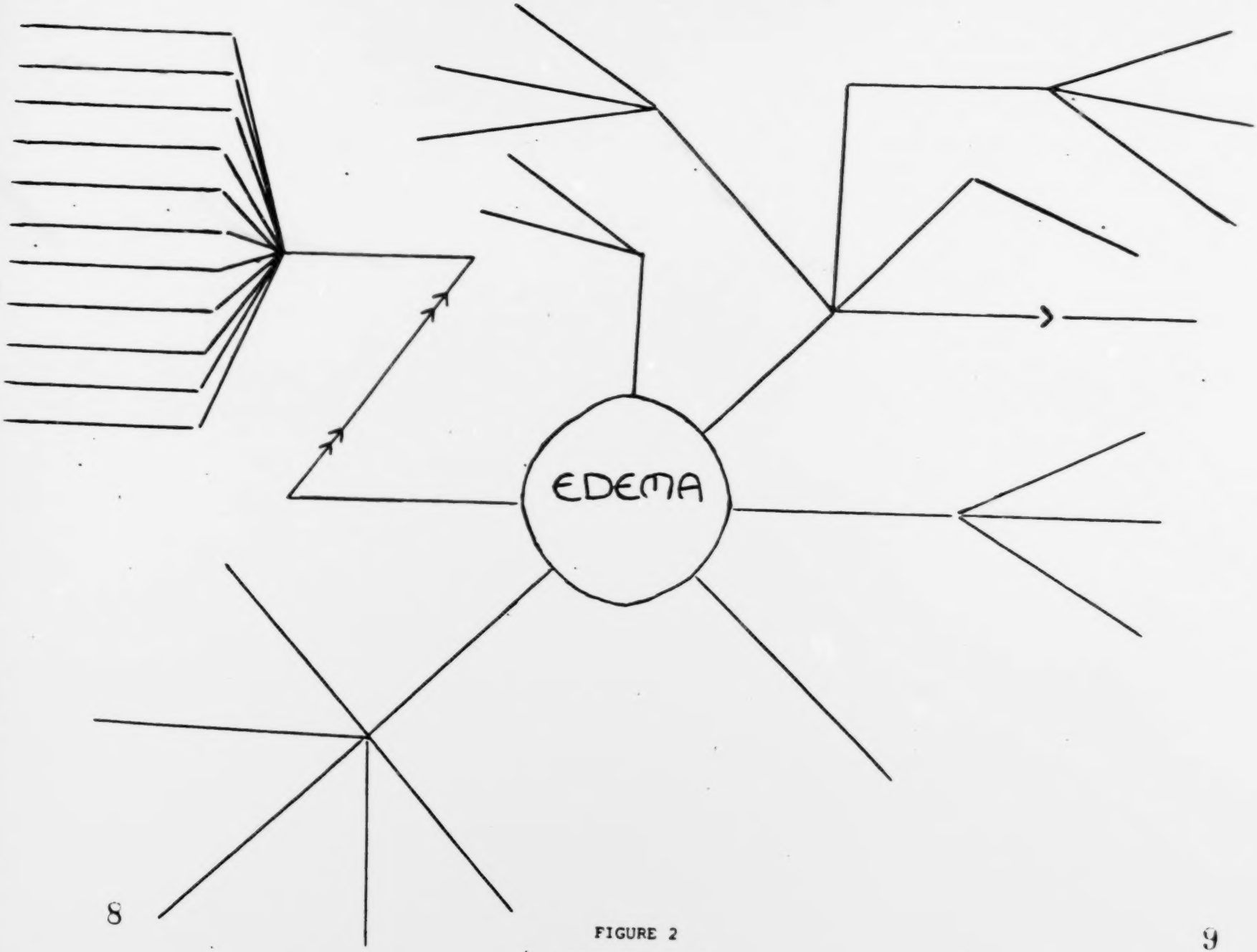

FIGURE 2

Skeletal Overview

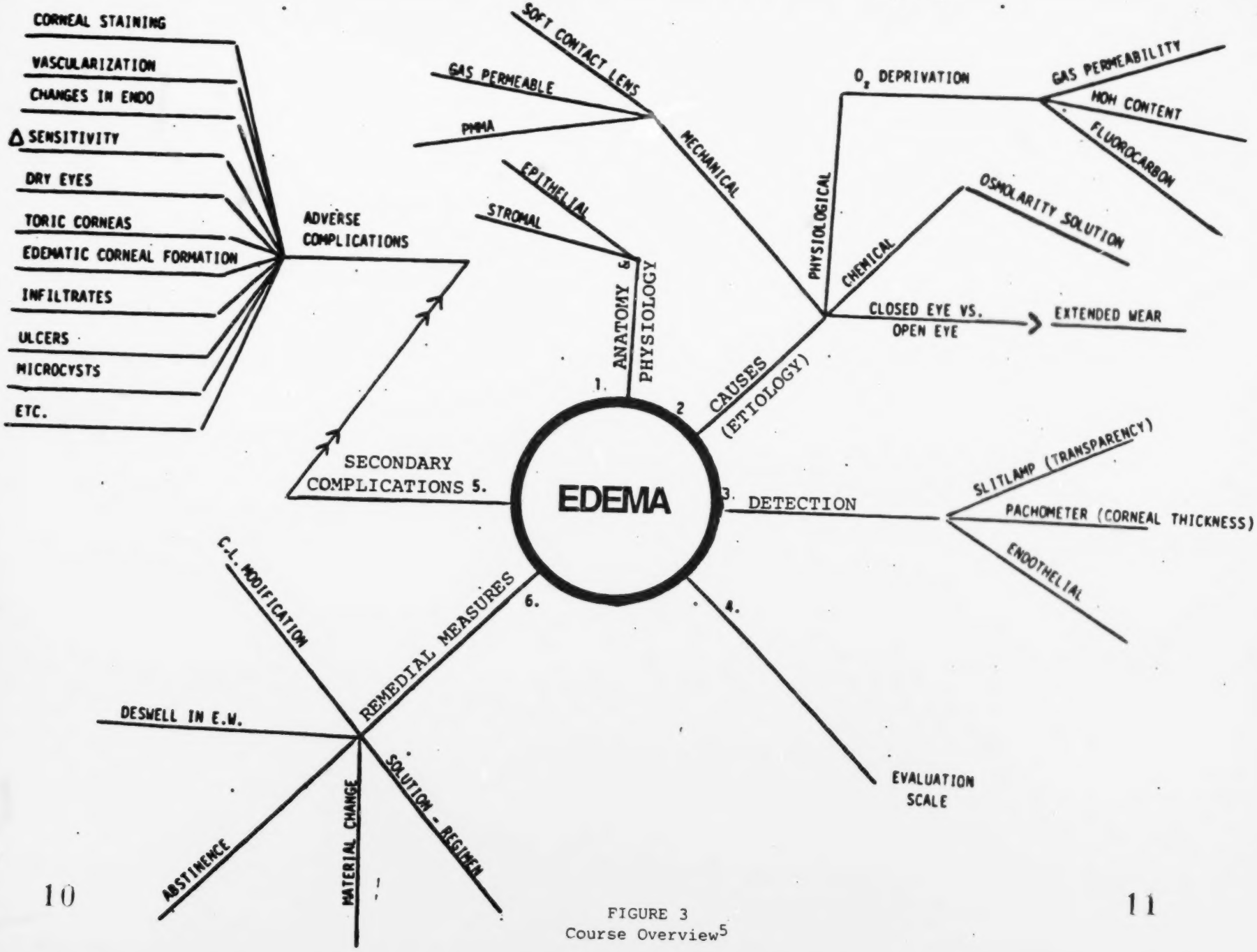

FIGURE 3
Course Overview[5]

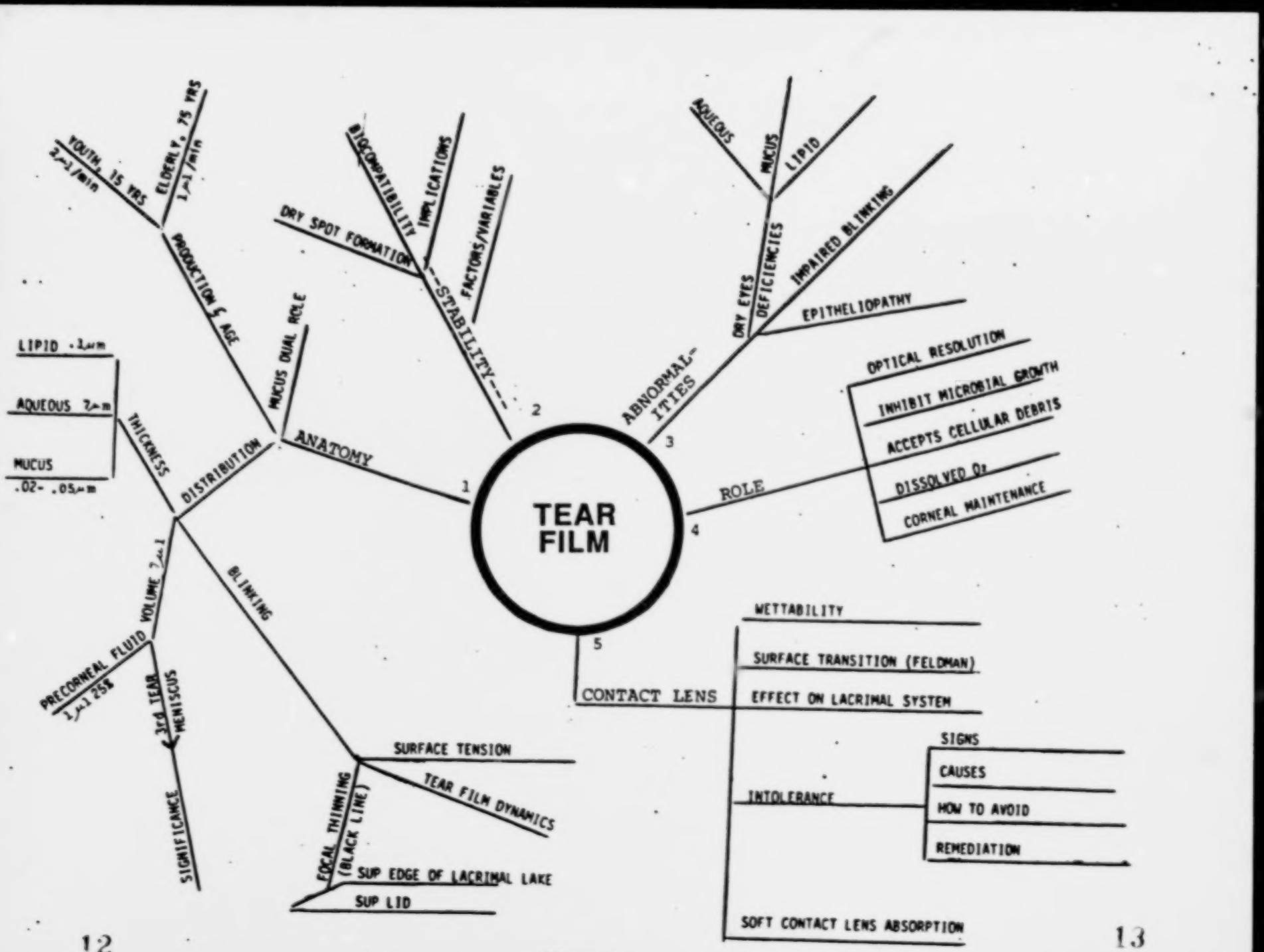

FIGURE 4
Lecture from Figure 3[5]

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